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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT MILLER

Appeal 2008-4954
Application 10/669,116
Technology Center 1700

Decided: January 16, 2009

Before ROMULO H. DELMENDO, JEFFREY T. SMITH, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from a final rejection of all pending claims 1, 2, 4, 7-17, and 19-27. (Appeal Brief filed September

12, 2007, hereinafter “App. Br.”; Final Office Action entered June 1, 2007).
We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Appellant’s invention is directed to an electrical energy storage device including, *inter alia*, an identification code on a current collector, “wherein the identification code relates to at least one of a weight of the current collector and gram amount of electrode active material” contacting the current collector. (Claim 1; Spec. 1, ll. 14-20; 2, ll. 10-17).

Representative claims 1 and 13 read as follows:

1. An electrical energy storage device, which comprises:
 - a) a first electrode comprising an electrode active material contacted to a support portion of a current collector;
 - b) a unique identification code etched into an exposed portion of the current collector, wherein the identification code relates to at least one of a weight of the current collector and a gram amount of the electrode active material;
 - c) a second, counter electrode;
 - d) a separator disposed between the first and second electrodes to prevent direct physical contact between them when they are in electrical association with each other;
 - e) a casing housing the first and second electrodes; and
 - f) a first terminal connected to the current collector of the first electrode and a second, opposite polarity terminal connected to the second electrode.

13. An implantable medical device powered by an electrochemical cell, the cell comprising:
 - a) a cathode comprising a current collector having a support portion and a tab, wherein the support portion of the current collector comprises opposed

- first and second major faces contacted with silver vanadium oxide and fluorinated carbon, respectively, while the tab remains exposed;
- b) a unique identification code etched into the current collector tab;
 - c) an anode;
 - d) a separator disposed between the cathode and anode to prevent direct physical contact between them when they are in electrical association with each other;
 - e) a casing housing the cathode and anode; and
 - f) a first terminal connected to the current collector of the cathode and a second, opposite polarity terminal connected to the anode.

(App. Br. 19, 21, Claims Appendix)

The prior art references relied upon by the Examiner to reject the claims on appeal are:

Merlin	5,552,574	Sep. 3, 1996
Lessar	6,006,133	Dec. 21, 1999
Miyazaki ¹	6,315,801	Nov. 13, 2001
Gan	6,790,561	Sep. 14, 2004

The following rejections are before us for review:

Claims 1, 2, 4, 7, 8, 12, 16, 17, 19-24, 26, and 27 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Lessar, Miyazaki, and Merlin (Ans. 3-6); and

¹ The Examiner refers to this reference as Miyazuki. (Ans. 3-14). Appellant refers to this reference as both Miyazaki and Miyazuki. (App. Br. 10-18; Reply Br. 2-7).

Claims 9-11, 13-15, and 25 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Lessar, Miyazaki, Merlin, and Gan (Ans. 6-9).

Appellant argues claims 1 and 16 together and does not submit separate arguments for claims 2, 4, 7, 8, 12, 17, 19-24, 26, and 27. Accordingly, we select claim 1 as representative of the issues on appeal for the first rejection. 37 C.F.R. § 41.37(c)(1)(vii). With regard to the second rejection, Appellant addresses claim 13, but does not separately address 9-11, 14, 15, and 25. Accordingly, we select claim 13 as representative of the issues on appeal for the second rejection. (*Id.*)

The Examiner found that Lessar teaches every limitation of claim 1 except for “an identification code on the exposed portion of the current collector.” (Claim 1; Ans. 4, ll. 1-8). In addition, the Examiner found that Miyazaki teaches forming identification marks on a current collector of an electrode, although it does not teach etching the marks. (Ans. 4, ll. 9-10; col. 4, l. 57 to col. 5, l. 11). The Examiner also found that Merlin teaches etching identification marks on metal contacts of a card. (*Id.* at 5, ll. 12-14). From these teachings, the Examiner concluded that it would have been obvious to one of ordinary skill in the art to combine the teachings of the prior art to arrive at the invention recited in appealed claim 1. (*Id.* at 6, ll. 3-13).

Appellant, on the other hand, contends that there is no motivation to combine Merlin with Lessar and Miyazaki because Miyazaki’s teachings need no improvement and Merlin’s teachings are merely redundant to those of Miyazaki. (App. Br. 15, ll. 14-24; 17, ll. 5-10). Furthermore, Appellant

asserts that Merlin is in a different field of endeavor relative to the battery art. (Reply Br. 6, ll. 8-16, 29-31).

Regarding the second rejection, the Examiner found the combined disclosures of Lessar, Miyazaki, and Merlin teach every limitation of claim 13 except for electrode active material of silver vanadium oxide and fluorinated carbon. (Ans. 7, ll. 4-7). However, the Examiner relied on Gan's teachings of an electrode with the claimed active material. (*Id.* at 7, ll. 12-14). The Examiner concluded that it would have been obvious to one of ordinary skill in the art to combine the teachings of Lessar, Miyazaki, Merlin, and Gan to obtain the claimed invention. (*Id.* at 7, l. 15 to 8, l. 2).

Appellant contends that Gan does not provide a teaching of a unique identification code in a cell construction and asserts that claim 13 has similar patentable subject matter as recited in claim 1. (App. Br. 18, ll. 6-15).

ISSUES

Thus, the issues arising from the contentions of the Examiner and Appellant are:

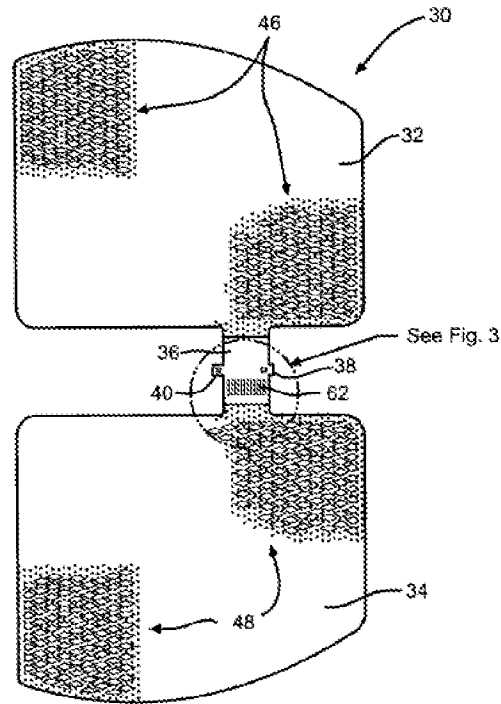
Has Appellant shown that the Examiner reversibly erred in determining that a person having ordinary skill in the art would have found it obvious to etch an identification code into Lessar's current collector as suggested by the collective teachings of Miyazaki and Merlin, thus arriving at an electrical energy storage device encompassed by claim 1?

Has Appellant shown that the Examiner reversibly erred in determining that a person having ordinary skill in the art would have found it obvious to provide an electrode active material of silver vanadium oxide and

fluorinated carbon as suggested by Gan, thus arriving at a device encompassed by claim 13?

FINDINGS OF FACT

1. Appellant's Fig. 2 is reproduced below:



—FIG. 2

- Fig. 2 depicts a current collector 30 including a tab 36 having an ID matrix identifier (i.e., identification code) 62. (Spec. 3, ll. 5-6; 5, ll. 7-9).
2. Appellant's Specification describes an ID matrix 62 etched into the current collector that is, after it is scanned, associated with weight values of the current collector and various component blanks that

- comprise a cell in a central processing unit or some other tangible medium such as on a disk or printout. (Spec. 11, ll. 6-19).
3. The Specification describes an exemplary ID matrix 62 having a cell model number and unique serial number. (Spec. 12, ll. 23-24).
 4. Lessar discloses an electrical energy storage device for an implantable medical device including: an assembly of anode and cathode layers that are separated by interposed separator layers and impregnated with an electrolyte, registration tabs extending from the cathodes and anodes for electrically connecting the electrodes to each other and to feedthroughs, and a case for receiving the assembly. (Col. 8, l. 59 to 9, l. 17).
 5. Miyazaki discloses:

[A]n electrode plate for a secondary battery with a nonaqueous electrolyte comprising a collector and an active material layer which is formed of at least an active material and a binder disposed on the collector, wherein said electrode plate is provided with a terminal mounting portion provided with a collector surface exposed to mount a terminal, said exposed collector surface having substantially the same shape and size as those of an area to which the terminal is actually mounted. [Col. 3, ll. 35-45].
 6. Miyazaki discloses it is known that:

In order to effectively perform [assembling] processes with high accuracy, it is available to apply process control marks, cutting marks, position alignment marks and the like mark[s] to the electrode plate and *also apply various identification marks or symbols such as manufacture lot numbers, bar-codes and the like for easy identification and manufacture control of the electrode plate.* [Emphasis added; col. 2, l. 64 to 3, l. 3].

7. Miyazaki's Figs. 9 and 14 are reproduced below:

FIG. 9

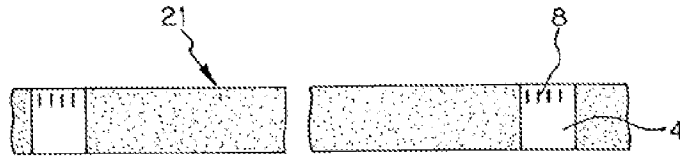
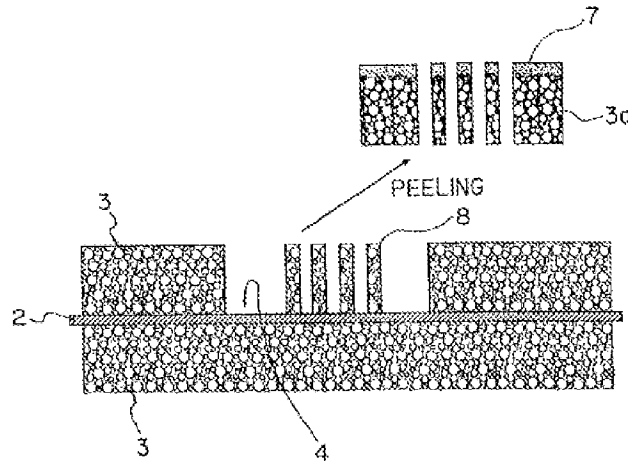


FIG. 14



Figs. 9 and 14 depict identification marks 8 formed on terminal mounting portions 4 of an electrode plate 21 when solidifying agent 7 with solidifying agent permeating area 3a is removed from active material layer 3 on collector 2. (Col. 16, ll. 9-25; col. 17, ll. 15-16, ll. 34-47).

8. Miyazaki discloses:

As the collector used for the electrode plate of the present invention for a secondary battery with a nonaqueous electrolyte, it is preferable to use a metallic foil such as an aluminum foil, a copper foil or the like. Such a metallic foil preferably has a thickness of from about 10 to 30 μm . [Col. 10, ll. 63-67].

9. Appellant does not assert that Miyazaki's identification code differs from the claimed "unique identification code" (e.g., "cell model number and a unique serial number") in terms of content.
10. Merlin discloses etching information in layers of contacts in an electronic chip card to form an indelible message with a controlled level of fineness, which can be performed throughout the manufacturing stages. (Col. 2, ll. 6-23).
11. Merlin discloses the contact layers are made from nickel and gold with thicknesses of 1 and 0.1 μm , respectively. (Col. 3, ll. 15-19, 50-54).
12. Gan discloses "a cathode having the configuration of: SVO/current collector/CF_x." (Col. 2, ll. 36-37).
13. Appellant did not dispute the Examiner's findings with respect to Lessar, Miyazaki, and Merlin collectively disclosing every limitation recited in appealed claim 1. (App. Br. 11-17; Reply Br. 2-7).
14. Appellant did not dispute the Examiner's findings with respect to Lessar, Miyazaki, Merlin, and Gan collectively disclosing every limitation recited in appealed claim 13. (App. Br. 18; Reply Br. 2-7).

PRINCIPLES OF LAW

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1734 (2007).

“The patentability of a product does not depend on its method of production. . . . If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985).

“Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). *See also In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1380 (Fed. Cir. 2007).

“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” *KSR*, 127 S. Ct. at 1740. According to *KSR*, “[i]f a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *Id.* “For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* Furthermore, “‘familiar items may have obvious uses beyond their primary purposes.’” *In re ICON Health*, 496 F.3d at 1380 (*quoting KSR*, 127 S. Ct. at 1742).

ANALYSIS

Obviousness Rejection of Claims 1, 2, 4, 7, 8, 12, 16, 17, 19-24, 26, and 27 in View of Lessar, Miyazaki, and Merlin

Claim 1

Claim 1 recites an electrical energy storage device, which comprises, in relevant part, “a unique identification code etched into an exposed portion of the current collector, wherein the identification code relates to at least one of a weight of the current collector and a gram amount of the electrode active material.” Claim 1, however, does *not* require (as part of the claimed device) a central processing unit or other tangible medium that associates the unique identification code to “relate[] to a weight of the current collector and a gram amount of the electrode active material.” (FF 1-3). Therefore, the unique identification code of claim 1 simply reads on a model number and serial number.

Appellant does not assert that the claimed unique identification code differs from the identification codes disclosed in Miyazaki. (FF 5-9). That is, Appellant does not contest the Examiner's findings that the collective teachings of the prior art disclose every claim limitation. (FF 13). Rather, Appellant contends: “[O]ne skilled in the art at the time of the present invention having the benefit of Miyazuki et al. would not have been motivated to look to Merlin et al. to arrive at [Appellant's] claims.” (App. Br. 16, ll. 19-22).

Appellant's contention is not persuasive to demonstrate that the Examiner erred in determining the claimed subject matter would have been obvious in view of the prior art. First, Appellant has not shown that the process of etching the claimed identification code into the current collector distinguishes the resulting markings over those described in Miyazaki. In this regard, the process for making a claimed device cannot impart

patentability when the claimed product is the same or obvious from the prior art. *In re Thorpe*, 777 F.2d at 697.

Applying this principle, Miyazaki discloses an identification code having raised portions formed on a current collector with electrode active material. (FF 7). Here, it reasonably appears that the prior art code and the claimed etched identification code have the same structure because each comprise raised portions that form the code. Appellant has not provided any persuasive evidence that the process of etching would result in a claimed device that is structurally different from the prior art.

Even if etching forms an identification code with a different structure relative to the identification code disclosed by Miyazaki, the Examiner found Merlin teaches etching for marking metal contacts and concluded that a person having ordinary skill in the art would have been led to combine it with Lessar and Miyazaki “since etching can be performed at any stage in the manufacturing process . . . thus allowing more flexibility” and “also offers advantages over active material deposition because it is not susceptible to damage” (FF 10; Ans. 11-12).

In response to the Examiner’s determination, Appellant argues:

It would be one thing if Merlin et al. was etching something to do with a battery. Instead, they teach laser etching the connector of a chip card, bank card, telephone card, and the like. . . . Not only would one skilled in the art have to first realize that Miyazuki et al. needed improvement, even though there's no indication of that, but they would have to then decide it was best to look outside the battery arts to the chip card arts and then finally realize that a patent teaching laser etching in a totally unrelated art for an unrelated purpose could be used to improve a process [Miyazuki et al.] that likely required no improvement. [Reply Br. 6, ll. 4-16].

Appellant's argument is unpersuasive. Merlin discloses etching metal contacts in an electronic chip card to form an indelible message with a controlled level of fineness, which can be performed throughout the stages of manufacturing. (FF 10). Like Appellant, Merlin is concerned with the problem of printing information into a substrate. (FF 1, 2, and 10). Thus, while not within Appellant's field of endeavor, Merlin's teaching is reasonably pertinent to the same problem addressed by Appellant. Therefore, Merlin is analogous art. *In re Bigio*, 381 F.3d at 1325. Furthermore, Miyazaki discloses forming identification marks on thin metal substrates. (FF 8). Merlin teaches laser etching on thin metal substrates to form indelible marks with controlled fineness. (FF 10 and 11). Thus, it would have been obvious to one of ordinary skill in the art to modify Miyazaki's method of forming an identification code by using Merlin's technique of etching to obtain a predictable result. *KSR*, 127 S. Ct. at 1740. In other words, a person having ordinary skill in the art would have found it obvious to use Merlin's etching technique (Facts 10 and 11) in lieu of Miyazaki's solidifying/peeling technique (Fact 7) based on the expectation that these techniques would be interchangeable ways to provide an indelible marking in or on a metallic substrate. Appellant has not shown that the claimed etching technique is beyond the skill of one of ordinary skill in the art.

Appellant's argument that Miyazaki needs no improvement and therefore one of ordinary skill in the art would not look to Merlin to modify Miyazaki's teachings lacks persuasive force. Appellant has not shown any persuasive evidence that Miyazaki would not benefit from an *indelible*

identification mark that could be formed with a controlled level of fineness, or that such a mark would make Miyazaki's current collector inoperable.

For the reasons discussed above, Appellant has failed to show the Examiner erred in determining claims 1, 2, 4, 7, 8, 12, 16, 17, 19-24, 26, and 27 would have been obvious in view of the prior art.

Claims 9-11, 13-15, and 25 Rejected As Obvious in View of Lessar, Miyazaki, Merlin, and Gan

Claim 13

Appellant asserts: "Gan . . . lacks any recognition that it is useful in a cell construction to provide a current collector for an electrode with a unique identification code" and relies on the same arguments as presented with respect to claim 1 above to support patentability of claim 13. (App. Br. 18, ll. 10-15). Appellant's assertions are unpersuasive. Appellant does not dispute the Examiner's factual finding that Gan discloses "a cathode having the configuration of: SVO/current collector/CF_x." (FF 12 and 14). Based on this finding, the Examiner concluded that it would have been obvious to combine the teachings of Lessar, Miyazaki, Merlin, and Gan "to create a cell structure that could share both ions and electrons during cell discharge." (Ans. 7, l. 12 to 8, l. 2). For the same reasons as discussed above with respect to Lessar, Miyazaki, and Merlin, Appellant's assertions with respect to the identification code fail to show that the Examiner erred in determining that the claimed subject matter would have been obvious in view of the prior art.

CONCLUSION

Appellant has not shown that the Examiner reversibly erred in determining that a person having ordinary skill in the art would have found it obvious to etch an identification code into Lessar's current collector as suggested by the collective teachings of Miyazaki and Merlin, thus arriving at an electrical energy storage device encompassed by claim 1.

Appellant has also failed to show that the Examiner reversibly erred in determining that a person having ordinary skill in the art would have found it obvious to provide an electrode active material of silver vanadium oxide and fluorinated carbon as suggested by Gan, thus arriving at a device encompassed by claim 13.

ORDER

The decision of the Examiner rejecting claims 1, 2, 4, 7-17, and 19-27 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

rvb

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